ENVIRONMENTAL ASSESSMENT
MOUTH OF COLUMBIA RIVER MAINTENANCE DREDGING
AND
DISPOSAL

INTRODUCTION

The Mouth of the Columbia River (MCR) deep-draft navigation project consists of a 1/2-mile wide navigation channel extending for about 6 miles through a jettied entrance (3 miles seaward and shoreward of the tip of the north jetty) between the Columbia River and the Pacific Ocean. The channel was deepened to its present depths in 1984 and has been maintained at those depths to date. The northerly 2,000 feet of the channel is maintained at 55 feet and the southerly 640 feet is maintained at 48 feet. With an additional 5 feet of depth allowed for advanced maintenance. In its present configuration, the entrance channel has required annual dredging of 4-5 million cubic yards on average of fine to medium-grained sedimentary sand to maintain the authorized depths. No action would result in unacceptable channel shoaling and creation of hazardous navigation conditions.

There are 4 MCR ocean dredged material disposal sites (ODMDS) (A, B, E and F) that have been used in their original Environmental Protection Agency (EPA)-designated site dimensions since 1977. Expanded site dimensions occurred under Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA) and have been utilized since 1993 for Sites A, B, and F and since 1997 for Site E (here after referred to as the Shallow Water Site). Site B was again expanded in 1997, but has not been used since 1997. The site expansions were necessary, as original site configurations proved inadequate for the large quantity of material dredged from the channel. Portland District Corps of Engineers (Corps) and EPA Region 10 considered site expansions to be the prudent management action until new sites could be studied and designated. Site A may or may not be used depending on results of bathymetric surveys to be conducted in the spring of 2003 and whether specific approval is provided by EPA. The authority to use expanded Site F expires in May, 2003 and therefore Site F will not be used for year 2003 disposal. The Shallow Water Site has capacity and will be used in the future. Locations of disposal sites are shown in Figure 1.

The EPA has identified the Shallow Water Site and a new ODMDS, the Deep Water Site, for designation under Section 102 of the MSPRA. The EPA's evaluation of criteria established under Section 102 is contained in the 1999 Final Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS) for Channel Improvements, Columbia and Lower Willamette Federal Navigation Channel. The Portland District has selected a portion of the Deep Water Site under Section 103 of the MSPRA for use for disposal of material dredged from the MCR pending designation of the whole site by the EPA under Section 102 (U.S. Army Corps of Engineers, 2000). The Portland District has reviewed EPA's evaluation of criteria under Section 102 contained in the 1999 IFR/EIS, and has determined that disposal in the Section 103 portion of the Deep Water Site of material

dredged from the MCR will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.

The entire Shallow Water Site (the original Section 102 site "E" plus the Section 103 expanded portion) and the Section 103 portion of the Deep Water Site are planned for use for year 2003 disposal.

In addition to the above-mentioned ODMDS, two sites, the North Jetty Site and the Benson Beach Site have been used under the authority of Section 404 of the Clean Water Act beginning in 1998 and 2002, respectively, to dispose of MCR material. Material has been discharged at the North Jetty Site to protect the jetty from undermining. Continuation of this use is planned for 2003. MCR material was discharged at the Benson Beach Site in 2002 to return material to the littoral cell taking advantage of a section 10/404 permit issued to Pacific County by the Seattle District, Corps of Engineers, Regulatory Branch (PN 2000-2-01174). The Benson Beach Site is considered a "demonstration" site to determine the effectiveness of returning material to the littoral cell. This site may or may not be used, depending on funding availability.

Discussions are on-going with the EPA, states, and the stakeholders regarding regional sediment management and the Corps will consider other possible disposal options in the future.

Dredging of the MCR navigation channel was addressed in the 1983 EIS for deepening and subsequent maintenance (U.S. Army Corps of Engineers, 1983). Since that time, each public notice issued for maintenance of the entrance channel has included a determination that a new EIS is not required and that EAs would be prepared to address any new action not previously addressed in the 1983 EIS, such as revisions to disposal sites. Dredging practices have essentially remained the same since 1983.

New information since preparation of the 1983 EIS related to dredging has arisen from concerns over possible entrainment of Dungeness crabs, salmon, and other fish species and disposal of dredged material on top of habitat occupied by benthic and demersal organisms during the dredging/disposal operation. To address these concerns, a number of studies have been done. Entrainment studies of crabs and fish were conducted by the Portland District Corps (Larson and Moehl 1990 and Larson 1993). These studies were conducted using the Corps' hopper dredge *Essayons* during the normal dredging season. Additional research was conducted during 2002 by contract (Pacific Northwest National Laboratory) on entrainment in the Columbia River upstream of the MCR and at the MCR. Sampling was also recently done at the new proposed Deep Water Site and at the Shallow Water Site by contract (MEC Analytical Systems) to establish biological baselines and to assess crab populations. This EA incorporates preliminary results of the 2002 studies. Final results are expected early in 2003. The EA will be amended if the final results vary significantly from the preliminary results.

Sites planned for future disposal of MCR dredged material include the Deep Water Site, the Shallow Water Site, and the North Jetty Site. Other possible sites for disposal include the Benson Beach Site and Site A. Disposal at the existing sites have been addressed under previous EAs. Analysis under NEPA, along with Section 103 Evaluations, Section 404 Evaluations and Coastal Zone (CZM) Consistency Determinations have been completed as required for the sites. Use of the Deep Water and the Shallow Water Sites have been evaluated in the 1999 Columbia River Channel Improvement IFR/EIS (U.S. Army Corps of Engineers, 1999). EPA Region 10 has concurred with all the 103 selections including the Deep Water Site.

The State of Oregon issued a Section 401 Water Quality Certification in 2002 for a five year period. The State of Washington issued a one-year Water Quality Certification. Application for a new Water Quality Certification under Section 401 has been submitted to the State of Washington.

Portland District Corps will continue to work with Federal and State resource agencies and other stakeholders to develop or modify disposal sites and may propose to use them in the future under a separate Public Notice.

PURPOSE AND NEED

The scope of this EA is to analyze the preliminary results of recent biological research on potential effects to benthic and demersal fauna from entrainment during dredging of the MCR and disposal of dredged material at the Deep Water Site and the Shallow Water Site and address the potential impacts to the local fishery. Research was conducted during 2002 by Pacific Northwest National Laboratory on entrainment and by MEC Analytical Systems on disposal sites.

In addition to the Deep Water Site and the Shallow Water Site, future disposal is planned for the Section 404 North Jetty Site and could include the Section 404 Benson Beach site and Site A. Disposal at these sites was addressed in the EA for year 2002 dredging and disposal (U.S. Army Corps of Engineers, 2002a). No new information is present for the North Jetty Site, the Benson Beach Site, and Site A so these sites will not be addressed specifically with regard to potential impacts in this EA.

The purpose and need of the MCR project has been described in prior environmental documentation. The only change to the project at this time is the addition of the Deep Water Site. The purpose of the Deep Water Site is to provide a location for disposal of material dredged from the MCR by the Corps of Engineers. Existing ODMDS have experienced mounding and have limited site capacity to receive future dredged materials. The site expansions in 1993 and 1997 temporarily alleviated the problem. The selection of the new Deep Water Site is considered necessary to provide sufficient capacity for disposal of material dredged from the MCR.

PROPOSED ACTION AND ALTERNATIVES

The proposed action is the addition of the Deep Water Site as a disposal site for the MCR project. Analysis of alternatives for disposal is contained in Volume I, Appendix H of the 1999 IFR/EIS for the Columbia and Lower Willamette River Navigation Channel Improvements Project. A no action alternative would result in insufficient disposal capacity. Lack of sufficient disposal capacity would require the Corps to cease maintenance dredging before all shoals are removed from the channel. This would result in the creation of hazardous navigation conditions for commercial shipping traffic that could ultimately lead to the shutdown of the channel to deep draft navigation.

Hydrographic surveys in the spring (normally in May) reveal how much material has accumulated in the channel and what disposal capacity is available in the dredged material disposal sites. After this information is developed, the Corps, in consultation with EPA, will prepare an Annual Use Plan that establishes the year's operation and the day-to-day decision framework for the dredging season. After this plan is developed, the MCR project manager will present the plan at a workshop in the local area. The following disposal sites are planned to be used during performance of MCR dredging.

Deep Water Site. This site is located approximately 6 miles from River Mile 0 and is approximately 12 square miles in area. Placement of dredged material would occur within a smaller 3,000 x 3,000-foot (207 acres) "drop zone" area so that material does not leave the larger 7,000 x 7,000 foot site boundaries as sand is dispersed from the dredge through the water column. The quantity of material placed in this area would be determined by the amount of shoaling and capacity and availability of other sites planned for use. This site will be used conservatively to accommodate capacity that other sites are not able to take and in the event weather conditions mandate the use of the site to ensure safety during the dredging deposition.

Shallow Water Site (original Section 102 Site "E" plus expanded Section 103 site). This site is located off the end of the north jetty and is highly erosive. Most of the material eroding from this site moves to the north where it could aid to offset on-going erosion along the Washington shoreline. This site has supported large quantities of disposed material in recent years, as much as 3.7 million cubic yards in one year.

North Jetty 404 Site. This site is located near the MCR north jetty and closely matches a historical placement site. The Portland District Corps began using this site in 1998 to protect the north jetty from potential undermining. Up to 500,000 cy have gone to this site.

The following disposal sites may be used during dredging of the MCR:

Benson Beach 404 Site. This site may or may not be used, dependant upon availability of funding. This site is located in Fort Canby State Park north of the North Jetty Site and is highly erosive. Dredged material would be pumped from the dredge to the beach from a location near the North Jetty or from an offshore location.

Site A. Bathymetric surveys are to be conducted during spring and the results provided to EPA. The Annual Use Plan to be produced by the Portland District Corps will determine if this site could be used during year 2003. This site has experienced mounding in the past and likely would be used sparingly if at all during the future.

Of the sites chosen for disposal, the North Jetty Site, Shallow Water Site and perhaps Benson Beach and Site A will be used to the maximum extent practicable prior to use of the Deep Water Site, which will serve as a reserve disposal area.

CHARACTERIZATION OF AFFECTED ENVIRONMENT

Physical and biological resources of the Columbia River offshore area have been investigated since the mid 1970's, including recent site monitoring and evaluation studies conducted by the Portland District Corps for ocean disposal sites. Information from these studies is included in the Columbia River Channel Improvements IFR/EIS (U.S. Army Corps of Engineers/U.S. Environmental Protection Agency, 1999) and subsequent studies for the Shallow Water and Deep Water Sites (U.S. Army Corps of Engineers 2001a, 2001b, and 2001c).

The area off the mouth of the Columbia River is a productive biological environment that is influenced by a variety of complex physical processes. The major short-term processes that affect the area are tides and local winds and currents. River flow also has a major seasonal impact on the area. The nearshore areas are subjected to high current and wave energy and populated by biological organisms adapted to this high-energy environment. The offshore area is less active and populated by organisms adapted to more stable environments (U.S. Army Corps of Engineers, 1999).

Bottom sediments at the proposed nearshore sites are primarily sand containing little or no silt or organic material. No rock or other unusual bottom features exist within the sites (U.S. Army Corps of Engineers, 1999). Baseline studies conducted at the Deep Water Site confirm that bottom sediments are primarily fine-grained sands, particularly within the smaller placement area. The percent fines increase with the increased distance from shore and with depth (U.S. Army Corps of Engineers 2001b). Side scan sonar data from this site show that the surface is uniform and nearly featureless with little detectable differentiation in material type. The only apparent geomorphic feature within the surveyed area is a band of low relief seafloor undulations in the eastern portion of the site (U.S. Army Corps of Engineers 2001c).

Previous studies have demonstrated that offshore biological communities exhibit considerable seasonal and yearly variation in structure and species composition. Species assemblages would likely vary between the proposed sites. Based on past offshore area studies, the Deep Water Site would likely contain higher numbers and diversity of benthic species than nearshore areas (U.S. Army Corps of Engineers, 1999).

A variety of anadromous and resident fish occur within the Columbia River offshore area. Occurrence of adult migratory species in the offshore area is correlated primarily

with their period of upstream migration. Juvenile migratory species are present following their migration out of the estuary. Resident species occur throughout the year with many using the estuary and nearshore area for rearing and as a nursery area. Species present include various flatfish, rockfish, and other demersal species (U.S. Army Corps of Engineers, 1999). Field reconnaissance at Benson Beach found evidence of clam populations, including razor clams. Dungeness crabs were also present within the area to be affected by disposal. WDFW has stated that the Benson Beach area is too unstable to be a productive razor clam bed, juvenile rockfish, flatfish, or lingcod settling or rearing area, or baitfish spawning area. For the same reason, Dungeness crab are rarely, if ever, found in the surf zone on this beach (Burkle, 2000).

Almost all of the Columbia River offshore area experiences some type of commercial fishing activity. The major fisheries are for bottom fish, salmon, crab, and other species of shellfish. Crab fishing occurs from December to September with the majority of the catch occurring early in the season. Most crab fishing occurs north of the Columbia River mouth at depths ranging from 25 to 250 feet MSL. Dungeness crab population numbers are subject to large cyclic fluctuations in abundance. Catch records for the fishery are generally believed to represent actual population fluctuations. Modeling studies by Higgins et al (1997) have shown that small scale environmental changes such as delay in the inshore currents in the Spring by a short period of time can dramatically impact survival of young of the year crab, but have no effect on adults and older juveniles inshore. Bottom fishing by trawl for flatfish, rockfish and pink shrimp occurs year-round throughout the entire offshore area, primarily at depths offshore from disposal sites. Commercial and recreational salmon fishing occurs over much of the offshore area. Fishing seasons and quotas are set by the Pacific Fisheries Management Council (U.S. Army Corps of Engineers, 1999 and the State Fish and Wildlife Agencies).

Marine mammals known to occur in the Columbia River and nearby offshore area include gray whale, harbor porpoises, northern and California sea lions, and harbor seals. Most cetacean species observed by Green et al. (1991) occurred in slope (600 to 6000-foot depths) or offshore waters. Harbor porpoises and Gray whales were prevalent in shelf waters less than 600 feet deep. Pinniped species likely to occur in the vicinity of the proposed disposal sites are harbor seal and California and northern sea lion. No rookeries occur within the area (Bonnell et al., 1989). The South Jetty of the Columbia River is used as a seasonal haulout area by northern sea lions.

Two species of listed marine turtles, loggerhead, leatherback, have been recorded from strandings along the Oregon and Washington coastline. They are typically associated with warmer waters that occur over the Pacific slope waters during summer (Green et al., 1991). Their occurrence inshore is incidental in nature.

Pelagic birds are numerous off the Columbia River including gulls, shearwaters, auklets, common murres, fulmars, phalaropes and kittiwakes. Briggs, et al. (1992) found that seabird populations were most densely concentrated over the continental shelf (less than 600 feet in depth). Brown pelicans typically occur from late spring to mid-fall along the Oregon and Washington coast. Large concentrations (10,000 plus birds) of this species

develop at the mouth of the Columbia River at the South Jetty and East Sand Island-Baker Bay. This species forages in nearshore waters of the Pacific Ocean and estuarine waters of the Columbia River (Briggs, et. al., 1992). Three species of cormorants occur in the Columbia River estuary and forage in nearshore Pacific Ocean waters, the estuary or upriver. Pelagic and Brandt's cormorants nest on the cliffs of Cape Disappointment (U.S. Army Corps of Engineers, 1999). Three species of terns occur in the Columbia River or over nearshore waters. Caspian terns are present from April to September and have established a large colony (plus or minus 9,000 pairs) on East Sand Island within the estuary. Future management efforts are expected in order to shift most of the Caspian tern population from the Columbia River to other locations. Common and Arctic terns occur off the Oregon and Washington coasts from April to September (U.S. Army Corps of Engineers, 1999) principally during migration. Shorebirds found on coastal beaches at MCR and estuarine flats include western sandpipers, sanderlings, dunlins, least sandpipers and semi-palmated plovers.

Federally listed threatened and endangered species which may occur in the Columbia River offshore area include 15 wildlife species and 12 stocks of salmon and steelhead. Wildlife species potentially affected by the disposal actions include blue, finback, sei, right, hump-backed and sperm whales, northern (Steller) sea lion, Columbian white-tailed deer, loggerhead and Pacific leatherback sea turtles, brown pelican, marbled murrelet, western snowy plover, bald eagle, and Oregon silverspot butterfly. Adults and juveniles of the listed salmonid stocks are present in the lower river year-round. Biological Assessments have been prepared to address the likely presence of these species within the Columbia River estuary and offshore area and potential effects of the proposed disposal actions (U.S. Army Corps of Engineers, 2002b and 2002c).

POTENTIAL EFFECTS

Since the thrust of current research is on quantifying impacts of dredging and disposal on Dungeness crab, the following summary of life history is provided: Females molt to maturity along the open coast, generally in the spring. Mating occurs at this time, but eggs are not extruded until the following winter. Eggs generally hatch between December and March, and larvae remain in the water column for a few months until they are carried offshore by ocean currents. Late-stage larvae are carried back inshore by currents in the spring. They metamorphose and settle to the bottom in late spring and summer. Settlement occurs both in nearshore coastal waters and in estuaries; within estuaries, crabs settle in both subtidal and intertidal habitats. Crabs settling in intertidal areas may remain there during their first summer, but move into the subtidal zone in fall. Few older crabs are resident in the intertidal, but move on and off the tidal flats with the tides. Crabs settling in nearshore waters may remain there for life, but there is evidence of some migration into the estuary between their first and second summers. Crabs remain in estuarine subtidal areas for up to two years, but late-juvenile and early-adult crabs leave the estuary before reproduction, which occurs mainly along the open coast. Both female and male crabs reach sexual maturity at about 2 years of age, but males may not breed until age 3 or older (in part from Wainwright et al., 1992). Abundance of juveniles in the

estuary vary yearly, but is generally greater in the spring and early summer than in the fall (Larson and Patterson, 1989).

Dungeness crab constitutes an important local fishery, where the annual commercial harvest (male only) in the Columbia River region averages about 5.3 million crabs. They also constitute a popular sport fishery.

Fisheries (from Entrainment during Dredging at the MCR)

Research on entrainment of organisms by hopper dredging is limited. A study at Grays Harbor, Washington estimated crab entrainment at 0.502 crab per cubic yard with entrainment mortality of 85% for crabs with over 50 mm carapace width and 49% for crabs with less than 50 mm carapace width (Armstrong et al., 1982).

Larson (1993) concluded that average crab entrainment on the *Essayons* dredge at the MCR was 4.1 crabs per cubic yard for four years of sampling (1985 through 1988) and 99% of crabs entrained were age 0^+ and found that the largest entrainment occurred when dredging against the ebb tide.

Preliminary data (Pacific Northwest Marine Laboratory, 2002), resulting from entrainment studies conducted aboard the *Essayons* hopper dredge from July 9 through October 13, 2002 showed that dredging of the MCR in 2002 (consisting of approximately 2.7 million cubic yards) resulted in entrainment rates of 0.060 crab per cubic yard and were separated by age class: 0^+ (0.003), 1^+ (0.014), 2^+ (0.032), and 3^+ (0.010). Final report on MCR entrainment research will be provided early in 2003. At that time, the study information will be available on the Corps website.

Crabs entrained were counted by age class and predicted Adult Equivalent Losses (AEL) were calculated. These calculations used a modified version of Wainwright et al., 1992 (See Pearson et al., 2002) to calculate the AEL. AEL data predicts how many crabs at a given age class would be lost to the fishery in the future based on numbers of crabs of various age classes entrained and how many of those crabs would have been expected to survive to a given age class based on known natural survival rates. Pacific Northwest Marine Laboratory (2002) estimated AEL at age 2^+ of approximately 108,000 crabs and at age 3^+ of approximately 49,000 crabs. The number of male recruits lost to the fishery was estimated at approximately 6,000 crabs. These calculations were based on sampling within an approximately 3 month period during the dredging season of one year, but abundance by age class can vary by year and by season (McCabe et al., 1989) and may explain differences in observed entrainment rates among studies.

Studies of salmon entrainment (Larson & Moehl, 1990) have demonstrated that migrating juvenile and adult salmon are not entrained since the dragheads are at or slightly below the bottom surface. Salmon migrate in the upper water column.

Fisheries (from Disposal at the Deep Water and Shallow Water Sites)

Fine sand (0.25 mm diameter) falls at about 6 feet per minute through water, which approximates the descent rate of the disposal material (U.S. Army Corps of Engineers, 1983). Therefore, dredged material would completely reach the bottom of the Shallow Water Site in about 10 minutes and the Deep Water Site in about 35 minutes. The natural sediment transport rate at the Shallow Water Site is high, moving mostly to the north and northwest (U.S. Army Corps of Engineers, 1983). Resuspension of disposed material is unlikely at the Deep Water Site once the material has settled to the bottom. Material placed in the Deep Water Site would likely remain in place or move very slowly. Sediment transport analysis conducted in the offshore area indicate that sediment movement through the Deep Water Site location is in dynamic equilibrium, i.e., rates of erosion and accretion are essentially equal (U.S. Army Corps of Engineers, 2001a). Dredged material placed at the Deep Water Site would be slightly coarser than sediments existing at the site but would contain similar chemical constituents at much lower than regional concern levels in the DMEF (1998). (U.S. Army Corps of Engineers, 2001b). Previous studies at offshore sites demonstrate that ambient sediment cover the dredged material within about 1 year (U.S. Army Corps of Engineers, 1999). Limited, nonpersistent turbidity is expected from disposal of these sediments.

Because placement of dredged material would be concentrated into a small area, benthic organisms within the disposal sites would be subjected to burial. Most sessile benthic organisms would not be expected to survive burial from the total disposal action, i.e., multiple dumps. Recolonization of the site would be expected to begin soon after disposal stopped from adjacent, unimpacted portions of the seafloor. Demersal fish and mobile shellfish would either avoid the disposal activity or be buried. Studies conducted by Chang and Levings (1978) and Pacific Northwest Marine Laboratory (1999) under contract to the Corps on crab and flatfish burial from dredged material disposal concluded that test dumps had no apparent adverse effects on flatfish but resulted in some mortality to crabs. The tests resulted in no obvious physical damage such as cracked carapaces or detached legs. Most crabs remained on the surface following the test dumps. All but a few crabs that were buried during the test disposal were found dead after 72 to 96 hours. The cause of death was not apparent from the tests. These studies were conducted under limited conditions, i.e., small buckets or tanks, and are not conclusive relative to burial response under actual disposal conditions in the open sea. The Corps and EPA predicted that some individual crabs would be lost, but, it is likely that some will also survive. It is unknown at this time how many will actually be lost, but because of the small area affected, a significant effect on Dungeness crab population was not anticipated. (U.S. Army Corps of Engineers, 1999).

Preliminary Data (MEC Analytical Systems, 2002) show that in late spring/early summer of 2002, trappable crabs (trapped using crab pots) were more abundant, smaller, and had softer carapaces in the Shallow Water Site than the Deep Water Site. The majority of crabs trapped at both sites were female. In fall of 2002, trappable crabs were more abundant and had harder carapaces in the Shallow Water Site than the Deep Water Site but were similar in size. The majority of crabs trapped at the Shallow Water Site were females and at the Deep Water Site were males. Crabs, in general, were more abundant

and larger in fall than in late spring/early summer. Preliminary numerical data is presented below:

Site	Season	# Crabs	Crab Density[1]	% Female	Size[2]
Shallow	sp / su	451	~25	~75	~5.1
Deep	sp / su	82	<2	~80	~5.5
Shallow	fall	852	~39	~69	~5.9
Deep	fall	1,313	~27	~10	~5.9

[1] Crab density measured in crabs per pot per 24-hour soak
[2] Crab size (carapace length) measured in inches

Two crab pot sampling locations were located in what is now the 103 portion of the Deep Water Site in fall of 2002 (48 hour deployment of traps). A total of 124 crabs were trapped in these two sites and about 79% were males. These numbers do not appear aberrant compared to other sampling locations within the Deep Water Site, but data have not been analyzed yet.

The most abundant commercially important fish caught (via otter trawl) during both late spring/early summer and fall of 2002 at the Shallow Water Site included tom cod (228 caught in late spring/early summer and 45 caught in late summer) and eulachon (356 caught in late spring/early summer and 788 caught in late summer) and at the Deep Water Site included Pacific sanddab (1,072 caught in late spring/early summer and 249 caught in late summer) and rex sole (168 caught in late spring/early summer and 228 caught in late summer). These species would be expected to move out of the area of disturbance; however, individual losses are possible.

Listed Marine and Terrestrial Wildlife

It has been determined that there would be no effect on humpbacked, blue, Fin, Sei, right, and sperm whales, leatherback and loggerhead sea turtle, Steller sea lion, bald eagle, western snowy plover, brown pelican, marbled murrelet, Columbian white-tailed deer, and Oregon silverspot butterfly for continued dredging of the MCR and disposal in areas identified in this EA (U.S. Army Corps of Engineers, 2002b and 2002c).

Listed Anadromous Fish

A BO issued by NOAA Fisheries in September, 1999 for the Operation and maintenance program for the Columbia River Federal Navigation Channel concluded that the entire Columbia River dredging program would Not Likely Adversely Affect listed anadromous fish. The ocean is not a “critical habitat” for the listed salmonids. Consultation with NOAA Fisheries is ongoing.

Cultural Resources

Cultural resources potentially affected by the proposed actions include shipwrecks. Disposal site evaluations have concluded that shipwrecks or remnants do not occur at these locations (U.S. Army Corps of Engineers, 1999).

FINDINGS

The new evidence collected since the Finding of No Significant Impact for year 2002 dredging and disposal (U.S. Army Corps of Engineers, 2002a) tends to confirm the Government's finding. Our evaluation suggest that limited use of the Deep Water Site as proposed will not result in significant environmental impacts. Note however, that these data collected on entrainment and faunal makeup of disposal sites during 2002 are preliminary. This EA may be amended based on final results of those studies. The following supports the Finding of No Significant Impact for MCR dredging and disposal:

1. Apparently low Dungeness crab entrainment rates and losses observed during year 2002 dredging of the MCR. Other studies in the MCR showed higher entrainment but these studies contained a large percentage of young of the year crabs since the studies began earlier than the year 2002 study. AEL data was not generated for the previous studies.
2. Evaluation of preliminary results confirms earlier prediction that ocean dumping would not significantly effect Dungeness crab or demersal fish populations.
3. No Effect determinations made for listed marine and terrestrial wildlife.
4. Not Likely to Adversely Effect determination made for listed anadromous fish.
5. Site evaluations concluded that no cultural resources would be impacted.

COORDINATION

This EA will be provided to the following Federal, State, and local agencies for comment:

U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
National Marine Fisheries Service
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Department of Parks and Recreation
Oregon Division of State Lands
Oregon State Historic Preservation Office
Washington Department of Ecology
Washington Department of Natural Resources
Washington State Historic Preservation Office
Lower Columbia River Port Districts
CREST
Pacific County
Columbia River Crab Fishermen's Association
CDOG

CONSULTATION REQUIREMENTS

a. Clean Water Act of 1977, as amended: Section 401 Water Quality Certifications were received from the States of Oregon and Washington in 2002. The certification from the State of Oregon was limited to five years. The certification issued by the State of Washington for the 2002 dredging season was limited to one year. Application for certification for MCR dredging has been submitted to the State of Washington.

b. Coastal Zone Management Act: Consistency determinations that have addressed applicable enforceable policies of the approved programs have previously been submitted to both states in accordance with Section 307 of the CZMA.

c. Endangered Species Act of 1973, as amended: Since the Endangered Species Act was established in 1973, ESA compliance has been obtained for maintenance of the MCR channel and the ocean disposal actions through continuing consultations with NOAA Fisheries and the U.S. Fish and Wildlife Service. The MCR maintenance dredging and disposal was most recently addressed in a Biological Opinion issued by NOAA Fisheries in 1999 and consultation is ongoing regarding current activities. Preliminarily, the described activities will not adversely affect endangered species, or their critical habitat designated as threatened or endangered, pursuant to the Endangered Species Act of 1973 (as amended).

d. Fish and Wildlife Coordination Act: The proposed action is being coordinated with USFWS, NOAA Fisheries, the Oregon Department of Fish and Wildlife, and the Washington Department of Fish and Wildlife.

e. Marine Protection, Research, and Sanctuaries Act of 1972, as amended: All existing ocean disposal sites have been evaluated using the site selection criteria under Sections 102 and 103 of this Act. All sites were determined to be suitable for selection and use for placement of material dredged from the MCR project. EPA has concurred in this determination. A 103 Evaluation was completed for the Deep Water Site and a history of evaluations under Sections 102 and 103 of the Act is documented in the 1999 EIS (U.S. Army Corps of Engineers, 1999). The management and monitoring plan for the MCR ODMDS has been updated by the EPA and the Corps.

f. Magnuson-Stevens Act: A revised Essential Fish Habitat evaluation is currently underway with NOAA Fisheries.

g. Cultural Resources Acts: A cultural resource evaluation had been coordinated with the Oregon and Washington State Historic Preservation Offices.

h. Executive Order 11988, Flood Plain Management, 24 May 1977: The proposed action would not affect the existing flood plain nor encourage further development in the flood plain.

i. Executive Order 11990, Protection of Wetlands: No effect

j. Analysis of Impacts on Prime and Unique Farmlands: No effect.

k. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA). The location of the proposed work is not within or near the boundaries of any site designated by EPA or the State of Oregon for a response action under CERCLA nor is it part of a National Priority List site under CERCLA.

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